Accelerated Computing And Generative AI

Summer Training Program on Accelerated Computing and Generative AI in collaboration with CDAC Pune

Organised by

Department of Information Technology and Computer Science and Engineering

Walchand College of Engineering, Sangli (NSM Nodal Centre)

Under the aegis of National Supercomputing Mission, Government of India

Dates: - 1st August to 10th August 2025 (Offline)

Our Patrons:
Dr. U. A. Dabade, Director, WCE Sangli
Shri. Ashish. Kuvelkar, Scientist G, CDAC Pune

Coordinator
Dr. D. B. Kulkarni, Professor, WCE Sangli

Co-Coordinator:
Ms. Aprupa Pawar, Assistant Professor, WCE Sangli

About Host Institute

Walchand College of Engineering, Sangli (WCE) was established in 1947 and aided by the Govt. of Maharashtra, is one of the oldest and premier engineering institutions in India with a beautiful campus of over 90 acres. WCE offers 8 UG programs in Civil, Electrical, Mechanical, Electronics, Information Technology, Artificial Intelligence & Machine Learning, Robotics & Automation and Computer Science & Engineering, 10 PG programs and Ph.D. programs. The institute is also given autonomous status by UGC since 2007.

About Course

The program covers the fundamentals of Deep Learning and the emerging field of Generative AI (GenAI) for text and image generation. Participants will engage in hands-on sessions to practically apply these concepts. The program is designed for **fourth-year undergraduate students** who are keen to build strong foundations and practical skills in **HPC, AI, and GenAI**, and explore research or career opportunities in these fields. This program introduces participants to a range of modern parallel programming models, including Open Multiprocessing (OpenMP), Message Passing Interface (MPI) and Compute Unified Device Architecture (CUDA)—NVIDIA's powerful platform for GPU-based parallel computing. It also introduces various modern concepts on Artificial Intelligence (AI).

Course Objectives

- To introduce the fundamentals of parallel Computing and deep learning.
- To deliver hands-on sessions on fundamentals of deep learning & generative AI.
- Introduce parallel architectures, programming models and commonly used parallel programming constructs/libraries/languages,
- To deliver hands-on sessions to provide experience applying HPC tools on both CPU and GPU platforms.

Course Contents

Week 1:
- Introduction to Parallel Computing – Sequential vs Parallel.
- Shared memory programming using OpenMP
- GPU Programming on NVIDIA GPUs
- Distributed Memory Programming using MPI
- Parallel computing patterns.
- Profiling Parallel Programs.

Week 2:
- Introduction to Neural architectures ANN, CNN Hands on of these architectures. Pretrained models and Transfer Learning followed by Hands on.
- Text Embeddings and encoder-decoder architectures. Introduction to transformer and Transfer Learning in NLP

- Foundations of Prompt Eng. Key Lang Chain concepts, LLM wrappers and prompt templates.
- Introduction to Gen AI for Image and End-to-end projects on GAN

Target Audience

The STP is open to fourth year from CSE, IT and Electrical branches across the state who are currently interested in learning courses related to Gen AI and parallel computing. Preference will be given to applicants from institutes located beyond 50 km from WCE, Sangli.

Important Dates

Registration Open: 22nd July, 2025

Last Date of Registration: 29th July, 2025

Course Duration: Daily 6 hours – Total 60 hours

Mode of conduct: Offline from 9:30 AM to 5:00 PM

Number of seats: 40

Eligibility: Students must be at least enrolled in seventh semester

Shortlisting criteria: CGPA

Program benefits

- Interaction with eminent speakers from industry and academia
- Industry certifications of worth **~21,000/- for FREE**
- Access to HPC resources during the STP.
- Food and accommodation will be provided during the training program.

Organizing Team and Speakers

Dr. Dinesh Kulkarni, Head, NSM Nodal Centre WCE Sangli

Dr. Umesh Chavan. Assistant Professor, WCE Sangli

Dr. Medha Shah, Associate Professor, WCE Sangli

Ms. Aprupa Pawar, Assistant Professor, WCE Sangli

Dr. Nilesh Pikle, Assistant Professor, IIIT Nagpur

Dr. Snehal Shinde, Assistant Professor, IIIT Nagpur

Dr. Anand Kulkarni, Assistant Professor, MIT WPU Pune

Mr. Mandar Gurav, Parallel Programming Consultant

Mr. Shailesh Patil, Assistant Professor, WCE Sangli

Ms. Aditi Pawade, Assistant Professor, WCE Sangli

Important Links

Registration Fees: ₹1500 out of which ₹1000 will be returned on successful completion of STP

Registration Link:
https://forms.gle/T6Hy2JLJ2QV4DVFa7

Contact Details

- Mrs. Sanjivani Suryavanshi : 7038750391
- Mr. Tejas Zende : 8605148967

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You can Visit us at:
https://nsmnc.ac.in